Amendments to the Specification

Please amend the specification as follows.

Please amend paragraph [0009], at page 4, as follows:

[0009] Radio signals transmitted by a plurality of transmission antennas TXi are received via different paths by a plurality of reception antennas RXj. Note that i represents a transmission antenna number, and j represents a reception antenna number. Here, when a transfer path between the transmission antenna TXi and the reception antenna ~~RXi~~ RXj is represented by p(i, j), in the case of 2×2 MIMO the conventional transfer apparatus has four transfer paths p(1, 1), p(1, 2), p(2, 1), and p(2, 2). When a propagation coefficient possessed by the transfer path p(i, j) is represented by h(i, j) and a transmitted signal transmitted by the transmission antenna TXi is represented by Ti, a received signal Rj received by the reception antenna RXj can be represented by expressions (1) and (2).

Please amend paragraph [0038], at page 21, as follows:

[0038] In FIG. 1, the transfer apparatus of the first embodiment of the present invention is composed of a transmission apparatus and a reception apparatus. The transmission apparatus comprises transmission antennas TX1 and TX2, synchronization subsymbol generating sections 101 and 105, data modulating sections 102 and 104, a propagation coefficient estimation symbol generating section 103, multiplexers 106 and 107, orthogonal modulation sections 108 and ~~109~~ 110, and a transmission local oscillator 109. The reception apparatus comprises reception antennas RX1 and RX2, orthogonal demodulation sections 111 and 113 , a reception local oscillator 112, synchronization subsymbol correlation sections 114 to 117, weighted-averaging sections 118 and 119, frequency correcting sections 120 and 121, an inverse propagation function estimating section 122, and data demodulating sections 123 and 124.

Please amend paragraph [0047], at page 26, as follows:

[0047] The transfer frame F1 is converted into a radio signal by the orthogonal modulation section 108 and the transmission local oscillator 109. The transfer frame ~~2~~ F2 is converted into a radio signal by the orthogonal modulation section 110 and the transmission local oscillator ~~108~~ 109. The transfer frame F1 and the transfer frame F2 which have been converted

into radio signals are simultaneously transmitted from the transmission antenna TX1 and the transmission antenna TX2.

Please amend paragraph [0054], at page 30, as follows:

[0054] Referring to FIGS. 6(f) and (g), in a similar manner, the synchronization subsymbol correlation section 115 estimates a carrier frequency error which occurs in the transfer path ~~p(1, 2)~~ p(2,1). In a similar manner, the synchronization subsymbol correlation sections 116 and 117 also calculate complex correlations between the repeating waveforms of the synchronization subsymbols Stx1 and Stx2 and the received signal R2 to estimate carrier frequency errors which occur in the transfer paths p(1, 2) and p(2, 2).

Please amend paragraph [0107], at page 54, as follows:

[0107] The propagation coefficient h(i, j) estimated from the the propagation coefficient estimation symbol Sref and the propagation coefficient h'(i, j) estimated based on the pilot carrier in each data symbol are input to the propagation path characteristics updating section ~~1412~~ 5232. Since h(i, j) and h'(i, j) have a phase difference due to a residual frequency error or phase noise, and a phase difference and an amplitude phase due to a transfer path variation, h(i, j) is used as an initial value, and an error between h(i, j) and h'(i, j) is used to update a propagation coefficient h''(i, j), thereby making it possible to estimate the propagation coefficient of each transfer path with higher precision.